

Serial No. **10/021,439**
Amdt. dated October 4, 2006
Reply to Office Action of May 8, 2006

Docket No. **K-0359**

Amendments to the Specification:

Please replace paragraph 16, page 4, with the following amended paragraph:

[016] An object of embodiments of the invention is to solve at least the above problems and/or disadvantages and to provide at least the advantages described hereinafter.

Please replace paragraph 17, page 4, with the following amended paragraph:

[17] Accordingly, embodiments of the present invention is directed to a cell switching method and a cell switching system that substantially obviate one or more problems due to limitations and disadvantages of the related art.

Please replace paragraph 18, page 4, with the following amended paragraph:

[0018] Another object of embodiments of the present invention is to provide a cell switching method and a cell switching system in which the performance of the switch can be improved with regard to non-blocking, real-time routing, scalability, and testing.

Please replace paragraph 19, page 4, with the following amended paragraph:

[0019] A further object of embodiments of the present invention is to provide a cell switching method and system in which input, output, and time queues are provided to facilitate testing and scalability.

Serial No. **10/021,439**
Amdt. dated October 4, 2006
Reply to Office Action of May 8, 2006

Docket No. **K-0359**

Please replace paragraph 20, page 4, with the following amended paragraph:

[0020] To achieve these objects and other advantages and in accordance with the purpose of embodiments of the invention, as embodied and broadly described herein, a cell switching method in a communication system of an asynchronous transfer mode (ATM) includes: a) dividing an input AAL2 cell into ATM adaptation layer (AAL) 2 type common part sublayer (CPS) packets; b) storing the divided CPS packets in different storage areas, in accordance with virtual paths/virtual channels (VPs/VCs) of the respective CPS packets, and storing identifiers of the storage areas; c) reading the stored CPS packets in the order of the stored identifiers of the storage areas, storing the read CPS packets in accordance with respective channel identifiers (CIDs), and storing the identifiers of the storage areas; and d) reading the CPS packets stored in step c) in the order of the identifiers of the storage areas stored in step c) and multiplexing the read CPS packets to generate an AAL2 cell.

Please replace paragraph 21, page 5, with the following amended paragraph:

[0021] In another aspect of embodiments of the present invention, a cell switching system in a communication system of an ATM includes: first, second, third, and fourth memories that sequentially store AAL2 type CPS packets and output them in their respective storage order, with each memory having a storage area. A reassembly processing unit divides an input AAL2 cell into the AAL2 type CPS packets, stores the divided CPS packets in different storage areas of

Serial No. **10/021,439**
Amdt. dated October 4, 2006
Reply to Office Action of May 8, 2006

Docket No. **K-0359**

the first memory, in accordance with VPs/VCs, and stores identifiers of the different storage areas in the second memory. A CPS packet switching unit reads the CPS packets stored in the first memory, in the order of the stored identifiers of the storage areas of the second memory, stores the read CPS packets in different storage areas of the third memory in accordance with respective CIDs, and stores the identifiers of the storage areas of the third memory in the fourth memory. An assembly processing unit reads the CPS packets stored in the third memory, in the order of the identifiers of the storage areas stored in the fourth memory, and multiplexes the read CPS packets to generate an AAL2 cell.

Please replace paragraph 22, page 5, with the following amended paragraph:

[0022] Additional advantages, objects, and features of embodiments of the invention will be set forth in part in the description which follows and in part will become apparent to those having ordinary skill in the art upon examination of the following or may be learned from practice of the invention. The objects and advantages of embodiments of the invention may be realized and attained as particularly pointed out in the appended claims.

Please replace paragraph 26, page 6, with the following amended paragraph:

[26] FIG. 3 illustrates a structure of a switching system according to embodiments of the present invention;

Serial No. **10/021,439**
Amdt. dated October 4, 2006
Reply to Office Action of May 8, 2006

Docket No. **K-0359**

Please replace paragraph 27, page 6, with the following amended paragraph:

[27] FIG. 4A illustrates a structure of an AAL2-type ATM cell according to embodiments of the present invention;

Please replace paragraph 28, page 6, with the following amended paragraph:

[28] FIG. 4B illustrates a structure of an AAL2-type CPS packet according to embodiments of the present invention;

Please replace paragraph 29, page 6, with the following amended paragraph:

[29] FIG. 4C illustrates a procedure of generating an AAL2-type ATM cell according to embodiments of the present invention;

Please replace paragraph 30, page 6, with the following amended paragraph:

[30] FIG. 5A illustrates an input queue value of a virtual path/virtual channel according to embodiments of the present invention;

Please replace paragraph 31, page 6, with the following amended paragraph:

[31] FIG. 5B illustrates an output queue value of a virtual path/virtual channel according to embodiments of the present invention;

Serial No. **10/021,439**
Amdt. dated October 4, 2006
Reply to Office Action of May 8, 2006

Docket No. **K-0359**

Please replace paragraph 32, page 6, with the following amended paragraph:

[32] FIG. 6 is a flow chart illustrating a procedure of generating an AAL2-type ATM cell according to embodiments of the present invention;

Please replace paragraph 34, page 7, with the following amended paragraph:

[34] FIG. 8 illustrates an example of a switching system according to embodiments of the present invention.

Please replace paragraph 35, page 7, with the following amended paragraph:

[35] FIG. 3 illustrates a structure of a switching system 1000 according to embodiments of the present invention. The switching system, (i.e., an AAL2 switch) includes first input/output units 700 and 800 and second input/output units 200 and 201 that sequentially store input AAL2-type ATM cells and output the cells in the order of their arrival, from the first stored cell to the last stored cell (first in first out (FIFO) order). Third input/output units 301 and 302 and fourth input/output units 300 and 303 sequentially store input data and output the data in the order from the first stored cell to the last stored cell.

Serial No. **10/021,439**
Amdt. dated October 4, 2006
Reply to Office Action of May 8, 2006

Docket No. **K-0359**

Please replace paragraph 38, page 8, with the following amended paragraph:

[38] The AAL2 switch of embodiments of the present invention further includes a sixth input/output unit 600 that routes the input CPS packets to another AAL2 switch, to provide a CPS packet router interface that enhances the scalability of the AAL2 switch. The sixth input/output unit 600 outputs the input CPS packets to a CPS packet router interface 5 of FIG. 7, in the first in first out order. The operation of the CPS packet router interface will be described later with reference to FIG. 6.

Please replace paragraph 47, page 10, with the following amended paragraph:

[47] Once the AAL2-type ATM cells of FIG. 4A, having different VPs/VCs, are input to the reassembly processing unit of the AAL2 assembly/reassembly processing unit 100, the AAL2 reassembly processing unit divides the AAL2-type ATM cells into the AAL2-type CPS packets of FIG. 4B. Also, the divided CPS packets are written in the input queue of the second input/output unit 200. Referring now to FIG. 5A, the VC/VP of the CPS packets identifies the corresponding input queue of the second input/output unit 20_200 into which the divided CPS packets are written.

Serial No. **10/021,439**
Amdt. dated October 4, 2006
Reply to Office Action of May 8, 2006

Docket No. **K-0359**

Please replace paragraph 58, page 13, with the following amended paragraph:

[58] FIG. 7 illustrates connection of a multiplex CPS router according to embodiments of the present invention. A CPS packet router 54-5 provides scalability to the AAL2 switch. A CPS packet that cannot be processed by one of the AAL2 switches 1.about.n, 11.about.nn is transferred to another AAL2 switch through the CPS packet router 5.

Please replace paragraph 59, page 13, with the following amended paragraph:

[59] FIG. 8 illustrates an example of a switching system 1000 according to embodiments of the present invention. Unlike the related art, AAL2 cell switching according to the present invention is implemented in such a manner that an AAL2 cell is directly switched without changing it to an AAL5 cell.

Please replace paragraph 60, page 14, with the following amended paragraph:

[60] The cell switching method and the cell switching system 1000 according to embodiments of the present invention have the following advantages.

Please replace paragraph 63, page 14, with the following amended paragraph:

[63] The foregoing embodiments and advantages are merely exemplary and are not to be construed as limiting embodiments of the present invention. The present teaching can be readily

Serial No. **10/021,439**
Amdt. dated October 4, 2006
Reply to Office Action of May 8, 2006

Docket No. **K-0359**

applied to other types of apparatuses. The description of embodiments of the present invention is intended to be illustrative, and not to limit the scope of the claims. Many alternatives, modifications, and variations will be apparent to those skilled in the art. In the claims, means-plus-function clauses are intended to cover the structures described herein as performing the recited function and not only structural equivalents but also equivalent structures.